

PATENT CLAIMS

1 1. A system for preventing accidents in the operation of
2 machine or apparatus (56), with:

3 at least one user end device or terminal (2) with an
4 output unit (10) for the transmission of authorizing user data
5 signals through the body of a user, and

6 at least one signal receiver (28) assigned to the
7 monitored apparatus or machine (56) having an interface unit (30)
8 for receiving signals transmitted through the body of the user,
9 unit (36-40, 44-48) for checking the received user data dealing
10 with authorization and units (42, 50, 54) for outputting a
11 clearance signal that allows an operation of the at least one
12 machine or apparatus (56) after a successful test of the received
13 authorizing user data, whereby

14 the signal receiver (28) is equipped and
15 programmed to terminate the output of the clearance signal
16 following a successful test of the authorization data, when
17 subsequent tests of the authorization data fail.

1 2. The system according to claim 1 wherein the output
2 unit (10) of the user end device or terminal (2) comprises a
3 coupling unit (4) for the inductive and/or capacitive coupling of
4 the authorizing user data signal into the body of the user.

1 3. The system according to claim 1 or claim 2 in which
2 the output unit (10) of the user end device or terminal (2) has a
3 contact region (6) for direct coupling of the authorizing user data
4 signal into the body of the user and/or a signal output (8) for
5 transmitting the signals comprising the authorization user data to
6 a device directly connected with the body of the first user.

1 4. The system according to one of the preceding claims
2 in which the user end device or terminal (2) is equipped and
3 programmed to transmit signals which comprise a code giving
4 authorization to the user and control commands for controlling the
5 signal receiver (28).

1 5. The system according to one of the preceding claims
2 in which the interface unit (30) of the signal receiver (28)
3 comprises a contact sensitive unit which receives the signals from
4 the user end device or terminal (2) upon contact of the contact
5 sensitive unit with the user.

1 6. The system according to one of the preceding claims
2 in which the interface (30) of the signal receiver (28) has an
3 inductive and/or capacitive unit for receiving the signals of the
4 user end device or terminal (2) by means of inductive and/or
5 capacitive signal transmission.

1 7. The system according to one of the preceding claims
2 in which the unit (36-40, 44-48) of the signal receiver (28) or
3 testing the authorizing data, comprise a correspondence register
4 (46) with at least two storage or memory location or data or
5 testing the authorizing data.

1 8. The system according to one of the preceding claims
2 in which the signal receiver (28) is equipped and programmed
3 depending upon the received signal from the user end device or
4 terminal (2) to access data for testing the data to serve as
5 authorization data.

1 9. The system according to one of the preceding claims
2 in which at least one user end device (2) is arranged in or on
3 protective clothing.

1 10. A user end device or terminal (2) for use with the
2 system according to one of the preceding claims with an output unit
3 (10) for transmitting authorizing data signals through this body of
4 a user.

1 11. A user end device or terminal (2) according to claim
2 10 with the features according to one of claims 2 - 4.

1 12. A user end device or terminal (2) according to
2 claims 10 or 11, for arrangement on or in protective clothing.

1 13. A signal receiver (28) for use with the system
2 according to one of claims 1 - 9 with:

3 an interface (30) for receiving through a body of a
4 user signals comprising authorization data and transmitted through
5 the body of the user,

6 units (36-40, 44-48) for testing the received
7 authorizing data, and

8 units (42, 50, 54) for producing a clearance signal
9 upon a successful test of the authorizing data, whereby the signal
10 receiver (28) is equipped and programmed to terminate the clearance
11 signal outputted as a result of a successful test of the
12 authorizing data when subsequent tests of the authorizing data
13 fail.

1 14. The signal receiver (28) according to claim 13 with
2 the features according to one of claims 5 - 9.

1 15. Protective clothing, like for example a protective
2 helmet, protective glasses or goggles, safety shoes and the like
3 with the user end device or terminal (2) according to one of claims
4 10 - 12.

1 16. A device or apparatus like a household appliance,
2 electric and mechanical tool, machine tool or the like with the
3 signal receiver (28) according to claims 13 or 14.

1 17. A hand grip device with a hand grip based body
2 including a hand grip outer surface (7) which is engaged by an
3 inner surface of the hand and has a segment forming a hand rest for
4 the inner surface, whereby in the region of the hand inner surface
5 rest at least one pressure sensitive zone (8) is formed for
6 generating a signal indicating the hand grip gripping state.

1 18. The hand grip arrangement of claim 17, characterized
2 in that it includes a plurality of pressure sensitive zones (8).

1 19. The hand grip device according to claims 17 or 18
2 characterized in that the pressure sensitive zone forms part of a
3 fluid chamber system (9).

1 20. The hand grip device according to at least one of
2 claims 17 - 19, characterized in that the pressure sensitive zone
3 is formed by an elastically deformable pressure chamber wall.

1 21. The hand grip device according to at least one of
2 claims 17 - 20, characterized in that the pressure chamber is
3 filled with a liquid, gel or gas.

1 22. The hand grip device according to at least one of
2 claims 17 - 21, characterized in that the pressure chamber is
3 coupled with a switch device.

1 23. The hand grip device according to at least one of
2 claims 17 - 22, characterized in that the pressure chamber is
3 coupled with a pressure measurement device.

1 24. The hand grip device according to at least one of
2 claims 17 - 23, characterized in that the hand grip device in the
3 region of the hand inner surface rest has pressure sensitive zones
4 in the hand ball rest region and a finger inner surface rest
5 region.

1 25. The hand grip device according to at least one of
2 claims 17 - 24, characterized in that in the region of the hand
3 grip device a plurality of individual finger inner surface pressure
4 sensitive zones are provided.

1 26. The hand grip device according to at least one of
2 claims 17 - 25, characterized in that in the region of the hand
3 grip device an orientation detecting device is provided.

1 27. The hand grip device according to at least one of
2 claims 17 - 26, characterized in that the hand grip device is a
3 hand grip of a drill.

1 28. The hand grip device according to at least one of
2 claims 17 - 27 in which a signal transmitting device is coupled a
3 signal to the user.

1 29. The hand grip device according to claim 28
2 characterized in that the signal transmitter device is so
3 configured that it effects a signal coupling on the basis of
4 electrostatic interaction.

1 30. The hand grip device according to at least one of
2 claims 17 - 29, characterized in that in the hand grip device a
3 signal modulating device is provided for the modulation of the
4 signal imitated by the coupling device.

1 31. The hand grip device according to at least one of
2 claims 17 - 30, characterized in that the signal is so modulated
3 that it contains a dated telegram.

1 32. A power driven tool with a housing device, a first
2 hand grip device (105), a second hand grip device (106) and a
3 device for detecting the gripping state for producing a signal
4 indicating the gripping state of the device.